

ADAPTIVE BANDWIDTH FOOTPRINT MATCHING FOR MULTIPLE COMPRESSED VIDEO STREAMS IN A FIXED BANDWIDTH NETWORK

ABSTRACT OF THE DISCLOSURE

A system and a method for simultaneous transmission of multiple media streams in a fixed bandwidth network are disclosed herein. The system is comprised of a central gateway media server and a plurality of client receiver units. The input media streams arrive from an external source and are then transmitted to the client receiver units in a compressed format. A state machine on the gateway media server detects if the network bandwidth is close to saturation. In one embodiment, the potential bandwidth saturation is measured by matching the time when the start of unit of media for each stream against the estimated transmission time for that unit. When any one actual transmission time exceeds its estimated transmission time by a predetermined threshold value, the network is deemed to be close to saturation, or already saturated, and the state machine executes a process of selecting at least one stream as a target for lowering total bandwidth usage. Once the target stream associated with a client receiver unit is chosen, the amount of data transmitted by the target stream is reduced, which could result in a lower data transmission rate. In one embodiment, the amount of data is reduced by a gradual degradation of the precision of the data, resulting in a greater potential for data compression, and/or by gradually reducing the resolution of the data of the target stream.